



**Information Services Opportunities
and Trends, 1995-2000**

Insurance

U.S. Market Analysis Program

73.19.11



**Information Services Opportunities
and Trends, 1995-2000**

Insurance

FORECAST UPDATE

INPUT[®]

Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington, D.C.



Digitized by the Internet Archive
in 2015

1 9 9 5

Insurance Sector

FORECAST UPDATE

INPUT®

Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington D.C.

INPUT®

Clients make informed decisions more quickly and economically by using INPUT's services. Since 1974, information technology (IT) users and vendors throughout the world have relied on INPUT for data, research, objective analysis and insightful opinions to prepare their plans, market assessments and business directions, particularly in computer software and services.

Contact us today to learn how your company can use INPUT's knowledge and experience to grow and profit in the revolutionary IT world of the 1990s.

SUBSCRIPTION SERVICES

- Information Services Markets
 - Worldwide and country data
 - Vertical industry analysis
- Systems Integration/Professional Services Markets
- Client/Server Software
- Outsourcing Markets
- Information Services Vendor Profiles and Analysis
- Electronic Commerce/Internet
- U.S. Federal Government IT Markets
- IT Customer Services Directions (Europe)

SERVICE FEATURES

- Research-based reports on trends, etc. (More than 100 in-depth reports per year)
- Frequent bulletins on events, issues, etc.
- 5-year market forecasts
- Competitive analysis
- Access to experienced consultants
- Immediate answers to questions
- On-site presentations

DATABASES

- Software and Services Market Forecasts
- Software and Services Vendors
- U.S. Federal Government
 - Procurement Plans (PAR, APR)
 - Forecasts
 - Awards (FAIT)

CUSTOM PROJECTS

For Vendors—analyze:

- Market strategies and tactics
- Product/service opportunities
- Customer satisfaction levels
- Competitive positioning
- Acquisition targets

For Buyers—evaluate:

- Specific vendor capabilities
- Outsourcing options
- Systems plans
- Peer position

OTHER SERVICES

Acquisition/partnership searches

INPUT WORLDWIDE

Frankfurt

Perchstätten 16
D-35428
Langgöns
Germany
Tel. +49 6403-911-420
Fax +49 6403-911-413

London

Cornwall House
55-77 High Street
Slough, Berkshire
SL1 1DZ, England
Tel. +44 (0) 1753 530444
Fax +44 (0) 1753 577311

New York

400 Frank W. Burr Blvd.
Teaneck, NJ 07666
U.S.A.
Tel. 1 (201) 801-0050
Fax 1 (201) 801-0441

Paris

24, avenue du Recteur
Poincaré
75016 Paris
France
Tel. +33 (1) 46 47 65 65
Fax +33 (1) 46 47 69 50

San Francisco

1881 Landings Drive
Mountain View
CA 94043-0848
U.S.A.
Tel. 1 (415) 961-3300
Fax 1 (415) 961-3966

Tokyo

Saida Building, 4-6,
Kanda Sakuma-cho
Chiyoda-ku, Tokyo 101
Japan
Tel. +81 3 3864-0531
Fax +81 3 3864-4114

Washington, D.C.

1921 Gallows Road
Suite 250
Vienna, VA 22182-3900
U.S.A.
Tel. 1 (703) 847-6870
Fax 1 (703) 847-6872

Published by
INPUT
1881 Landings Drive
Mountain View, CA 94043-0848
United States of America

U.S. Market Analysis Program

Insurance

Information Services Opportunities and Trends, 1995-2000

Copyright © 1995 by INPUT. All rights reserved.
Printed in the United States of America. No part of
the publication may be reproduced or distributed in
any form, or by any means, or stored in a database
or retrieval system, without the prior written
permission of the publisher.

The information provided in this report shall be used
only by the employees of and within the current
corporate structure of INPUT's clients, and will not be
disclosed to any other organization or person
including parent, subsidiary, or affiliated organization
without prior written consent of INPUT.

INPUT exercises its best efforts in preparation of the
information provided in this report and believes the
information contained herein to be accurate.
However, INPUT shall have no liability for any loss or
expense that may result from incompleteness or
inaccuracy of the information provided.

Abstract

This forecast update examines the trends, events and issues that will have an impact on the insurance industry and these vendors that supply information services to that market. The report also presents a forecast of the purchase of these services for the period 1995 to 2000.

The report analyzes and forecasts the insurance market for information services for the product/service categories of professional services, systems integration, outsourcing, processing services, network services, applications software products and turnkey systems.

Issues, trends and other factors affecting the insurance industry are analyzed from the perspective of both users and vendors in order to compare vendor plans and user needs and identify possible opportunities for needs to be addressed. Key topics discussed in this study include the high yield from claims automation, technology trends, the importance of cost containment, the growing emphasis on service and the changing buyer of information services. The analysis of the technology trends and industry issues, together with other research, is used to project the growth in the insurance market for information services over the next five years—1995 to 2000.

The forecast update report contains 54 pages and 10 exhibits.

Table of Contents

I	Introduction	I-1
	A. Purpose, Organization and Methodology	I-1
	1. Purpose	I-1
	a. Sector Definition	I-1
	b. Key Issues	I-2
	2. Organization	I-2
	3. Methodology	I-3
	B. General Business Overview	I-4

II	Industry Trends, Events and Issues	II-1
	A. Electronic Claims Management Leads to Fundamental Industry Change	II-1
	1. Best Example—Drug Prescription Claims Processing	II-1
	2. Why Are These Valuations Justified?	II-2
	a. Improved Sales	II-2
	b. Building Competitive Differentiators	II-2
	c. Cost Containment	II-2
	d. Strategy Implications	II-2
	B. Background/Industry Definition	II-3
	C. Overview	II-3
	D. Trends and Events	II-4
	1. External Trends and Events	II-4
	a. Property/Casualty Segment	II-4
	b. Life Insurance Segment	II-6
	c. Health Insurance—National Health Care Crisis Continues	II-6
	2. Internal Trends and Events	II-8
	a. Restructuring	II-8
	b. Emphasis on Service	II-9
	c. Cost Containment	II-9

3.	IS Trends	II-10
a.	Linking Technology to Business Strategies	II-10
b.	Reengineering	II-11
c.	Distributed Systems—Client/Server Technology	II-11
d.	EDI/Electronic Commerce	II-11
E.	Issues	II-12
1.	Fraud	II-12
2.	Regulation and New Competition	II-12
3.	The Changing Buyer	II-13

III	Information Services Market	III-1
A.	Overview	III-2
1.	Driving Forces	III-2
2.	Inhibiting Forces	III-4
3.	Information Services Market	III-4
B.	Product/Service Sector Analysis	III-6
1.	Processing Services	III-6
2.	Turnkey Systems	III-7
3.	Applications Software Products	III-7
4.	Outsourcing	III-8
5.	Systems Integration	III-9
6.	Professional Services	III-9
7.	Network Services	III-9
C.	Industry Segment Analysis	III-10

A	Forecast Database and Reconciliation	A-1
A.	Forecast Database	A-1
B.	Reconciliation	A-1
C.	1994-1999 Forecast	A-2

B	Vendor Competition	B-1
A.	Introduction	B-1
B.	Competitive Climate	B-1
C.	Competitive Positioning	B-2
1.	Processing Services	B-2
2.	Applications Software	B-3
3.	Professional Services and Outsourcing	B-3
4.	Systems Integration	B-3

D. Leading Vendors	B-3
E. Vendor Profiles	B-4
1. Electronic Data Systems, Inc.	B-4
a. Company Background	B-4
b. Strategy	B-4
c. Products and Services	B-5
d. Key Issues	B-6
2. Policy Management Systems Corporation	B-6
a. Company Background	B-6
b. Strategy	B-7
c. Products and Services	B-8
d. Alliances and Competitors	B-9
3. National Electronic Information Corporation	B-10

Exhibits

II

1	1992-1994 Catastrophic Events	II-5
2	Health Care Spending	II-7
3	Electronic Commerce in Health Care—Driving Forces	II-12

III

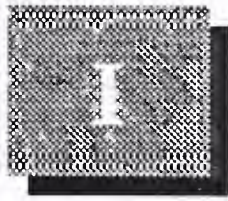
1	Insurance Sector, Information Services Market, 1995-2000	III-5
2	Insurance Sector, Information Services Market, 1995 and 2000	III-6
3	Insurance Industry Segment Growth	III-11

A

1	Insurance Industry Market Size by Product/Service Category, 1994-2000	A-2
2	Insurance—1995 MAP Database Reconciliation	A-3
3	Insurance Industry Market Size by Product/Service Category, 1993-1999	A-5

B

1	Leading Vendors to the Insurance Sector—1994	B-4
---	---	-----



Introduction

A

Purpose, Organization and Methodology

This chapter identifies the purpose and scope of this report, identifies key issues affecting information services expenditures in the insurance industry, notes how the document is organized, and explains INPUT's research methodology and the techniques used in the preparation of forecast data.

1. Purpose

The purpose of this *Forecast Update* is to identify key changes in the market for information services in the insurance industry and to provide the 1995 INPUT forecast for this market sector.

a. Sector Definition

INPUT defines the insurance sector as follows:

Life and Health (L&H) Insurance - Life insurance includes traditional death payment insurance in both standard and innovative forms, as well as savings and investment-related financial instruments such as annuities. The various forms of life insurance are generally sold directly to individuals, often to supplement minimal employer-provided benefits. Health insurance is most often provided in whole or in part by employers as a fringe benefit to employees, covering some or all of the costs of routine medical care, as well as providing some form of coverage for unusual major or catastrophic medical care that most individuals could not pay for directly. State-by-state Blue Cross and/or Blue Shield organizations that provide only medical insurance on a non-profit basis are included in the L&H segment.

Property and Casualty Insurance - Property and Casualty (P&C) insurance includes two subsegments. Commercial P&C insures

businesses, governments and other commercial and non-commercial organizations against financial loss from lawsuits or other casualties—generally relating to injuries to individuals or other organizations. Personal P&C insures individuals—especially homeowners and owners of automobiles—against property and casualty losses.

Independent Agents or Brokers - Independent agents and brokerages (collectively referred to here as agents) serve as intermediaries between individuals or organizations seeking insurance and the insurance companies. Primarily, agents match the needs of the insured to the loss-coverage or other financial programs offered by one or more insurers, selling the insurance selected and collecting a sales commission. Secondly, agents may service the insured's account over time, although often the main working relationship after sale is between the insured and the insurance company itself.

b. Key Issues

Key issues influencing the market for information services, which are discussed in this report, include:

- . The large number of catastrophes that have occurred in recent years, leading to a record-breaking number of claims, and the dramatic effect of this on the property/casualty segment
- . The government's plans for overhauling the U.S. health care system, including claims automation and cost control, which are expected to have a major impact on insurers providing health care coverage
- . The prospects for new competition from banks and others

Technological issues, such as the use of client/server architecture and applications are having an impact on the insurance market. Electronic imaging and systems operations contracts are also considered.

2. Organization

In addition to this introductory chapter, the report contains analyses of the information services market and competitive environment as described below:

Chapter II, *Industry Trends, Events and Issues*, discusses changes, market issues and activities, and competitive factors in the insurance

sector that can have an impact on the current and future use of information services.

Chapter III, *Information Services Market*, presents an analysis of the expenditures for information services, by product/service category, for the U.S. insurance market.

Appendix A, which contains the *Forecast Database*, presents a detailed forecast, by information services product/service category, for the insurance vertical market. A reconciliation to the previous forecast is also provided.

Appendix B, is a section on vendor competition with an assessment of the competitive climate for information services in this industry, observations on competitive positioning, and three vendor profiles.

3. Methodology

Much of the data on which this report is based has been gathered during late 1994 and early 1995 as part of INPUT's ongoing market analysis program. Trends, market sizes and growth rates are based upon INPUT research and in-depth interviews with users in the insurance industry and the IS vendors serving the industry. INPUT maintains ongoing relationships with, and a database of, all users and vendors that it interviews. Interviewees for the research portion of this report were selected from this database of contacts.

INPUT Library - Extensive use was made of INPUT's corporate library located in Mountain View, California. The resources in this library include on-line periodical databases, subscriptions to a broad range of computer and general business periodicals, continually updated files on over 3,000 information services vendors, and the most up-to-date U.S. Department of Commerce publications on industry statistics.

Financial Data - It must be noted that vendors may be unwilling to provide detailed revenue breakouts by delivery mode or industry. Also, vendors often use different categories of industries and industry segments, or view their services as falling into different delivery modes from those used by INPUT. Thus, INPUT must estimate revenues for these categories on a best-effort basis. For this reason, the delivery mode and individual segment forecasts should be viewed as indicators of general patterns and trends rather than specific, detailed estimates for individual years.

B**General Business Overview**

As documented by the U.S. Department of Commerce, economists and business journals, the U.S. economy ended 1994 on a high note—perhaps too high from the Fed's viewpoint—with growth at approximately 4.6%. Since employment has also returned to an acceptable level, there is some concern that the strong growth increases the threat of inflation in 1995. However, January's gain in employment—134,000 people—was well below 1994's monthly average gain of 290,000. This decrease has generally been regarded by both economists and the financial markets as the first solid evidence of slower growth. Most economic observers now feel that growth should slow to around 2% by the third quarter of 1995, giving the American economy what some economists are calling a "soft landing." There is also general agreement that the economy seems to be in a mid-cycle slowdown, and that long term, the risk of that slowdown becoming another recession in late 1995 is low.

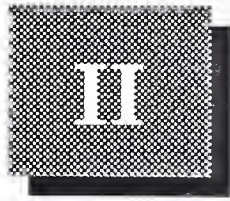
From a financial markets viewpoint, in 1994 bond yields rose nearly 200 basis points, and the Federal Funds rate was up 250 basis points. In 1995, most market analysts expect the Fed rate to top out at 6.5%, bond yields to move sideways in the range of 7.5% to 8.0% and S&P 500 earnings to increase approximately 7%—an amount smaller than in 1994. In general, most sectors of the U.S. economy should grow more slowly in 1995 than they did in 1994—the result of slight decreases in productivity and price/cost pressures. U.S. manufacturers are still restructuring, emphasizing cost-cutting and downsizing, and, coupled with the early-1995 weakness of the dollar (especially against the yen), world markets should find U.S. goods attractively priced. Imponderables remain the short-term impact of support for Mexico's peso and trade disputes with China. Both situations have the potential for significant short-term volatility, but in the long run should have little effect on the U.S. economy's return to modest, steady growth. Inflation in 1995, as measured by the Blue Chip consensus of approximately 50 private-sector economists, is expected to be at a conservative 2.9%, growing slightly through the year 2000 to a maximum of 3.3% (1996 and 1997) and then declining to 3.0% by the millennium.

The most encouraging sign of a healthy economy was seen recently in a statement by Federal Reserve vice chairman Alan Blinder, who noted, on March 9, that "the U.S. economy is downshifting to a more sustainable growth rate." He agreed with Fed chairman Alan Greenspan that the Consumer Price Index probably overstates the rate of inflation by 0.5 to

1.5 percentage points, but did not indicate whether the Fed rates, which have been raised seven times since February 1994, would be increased again. Most economists and analysts believe that no further increases will be seen in 1995, unless there is a major change in the economy.

Overall, however, the outlook for the U.S. economy in 1995 is for controlled, steady growth in the 5.7% range, with inflation at about 3%, and corporate after-tax profits at approximately 7%, down slightly from 1994's 10%.

(BLANK)



Industry Trends, Events and Issues

This chapter presents the significant trends, events and issues affecting the insurance industry in the U.S.

A

Electronic Claims Management Leads to Fundamental Industry Change

Throughout the insurance industry, especially in the property/casualty and health sectors, something special is going on. Automation of claims processing is concentrating information in an accessible form never before available. Analysis of this transaction data is yielding significant marketing and selling information, building innovative competitive differentiation, and pinpointing cost containment steps that are reducing overall health costs. In addition, this information is creating new strategic options for insurance industry players as well as outsiders.

1. Best Example—Drug Prescription Claims Processing

Prescription drugs are a key expense item in health care. This has been the first target for claims automation because the drug prescription delivery process is relatively simple, highly structured and involves just four parties (the patient, the doctor, the drugstore, and drug manufacturers/wholesalers/distributors).

One of the companies that has led in the automation of drug prescription claims is PCS. Once a publicly owned division of McKesson Corp. as recently as three years ago, PCS had a stock market value of \$200 million to \$300 million. In 1994, Eli Lilly acquired PCS for an amount estimated at over \$4 billion. How could such a tremendous valuation increase occur in such a short time?

Demonstrating that PCS was not an isolated incident, another drug prescription processor—Medco Containment, a mail order-oriented

processor—was acquired by Merck in 1993 for about \$6 billion. The third largest processor was sold for over \$2 billion in 1994 and two smaller processors combined in early 1995 to form the fourth largest firm, with a \$1 billion valuation.

2. Why Are These Valuations Justified?

The high prices for these drug prescription automation companies is a result of high tangible benefits value created by the processing of the claims information for the benefit of drug manufacturers and distributors. The value-added benefits range from improvements in selling techniques to creation of strategies for improved market share.

a. Improved Sales

Analysis of drug claims helps identify who buys what, doctor preferences, patterns and demographic information; all helpful to drug distributors and manufacturers in planning marketing and sales programs, advertising, emphasis, and making doctor contacts, etc.

b. Building Competitive Differentiators

Drug manufacturers that own drug claims processing divisions have found they can intercede in the prescription process by contacting doctors, providing information (e.g., new information on after-effects, etc.) This frequently causes the doctor to redirect prescriptions to the manufacturer's products and away from a competing company's products. This builds market share and competitive position relative to manufacturers that do not have this ability. This has yielded billions of dollars in incremental sales that were not available before.

c. Cost Containment

Post-claims settlement processing of prescription information can yield significant data for improving treatment and reducing excessive drug usage. This responds to the government's attempts to reduce health care costs and improve the administration of drugs. It also places the manufacturer in a desirable position for winning competitive high-volume business with managed care providers such as HMOs.

d. Strategy Implications

Longer term, knowledge that can be gained from the claims processing operation may yield information sufficient to allow drug companies and third-party processor companies to consider entering the health care insurance business.

These are the critical reasons why the valuations of drug prescription claims processing companies skyrocketed over the last several years.

Information services vendors that may benefit from claims processing automation include EDS, First Data Corporation, FFMC, Health Care Compare, and Medistat.

The above is an example of how dramatic changes in business methods in given industries (such as insurance) can result from the automation of basic transaction information. This automation can yield important strategic and tactical information. This process is going on in other industries as well. INPUT intends to identify these major changes in each of its industry sector reports.

B

Background/Industry Definition

A complex system of risk analysis and investment is the foundation for success in the insurance industry. Companies must set up reserves for losses and determine premiums based on estimates of potential claims. Though statistical analysis may show predictable trends and patterns, a series of unexpected catastrophes, such as occurred in 1992 and 1994, can seriously disturb the industry. In addition, insurers rely on their investment income to offset the cost of claims; moreover, negative changes in the economy can seriously affect insurers' financial stability.

While property/casualty companies traditionally rely on shorter term investments (that are liquid) to pay out losses, the life insurance industry can focus more on long-term investments.

Health insurers rely on employer-supported plans to cover premiums. As medical costs go up and employers are less willing to support these spiraling costs, they are turning to managed care options to reduce the ultimate costs of health care. On the horizon looms a proposed national health care system that may dramatically change the structure of the health insurance industry.

C

Overview

Most prognosticators are cautiously optimistic about growth in the insurance industry in 1995 and beyond. Property/casualty insurers have suffered underwriting losses for a decade or more, and low to mid-level interest rates have restricted investment income. Life insurers must compete with financial services firms and have found that premium growth for most products has been minimal. In solvency in this segment

has eroded public confidence. In fact, last year the number of life and health insurers that fell into major financial difficulties increased again. Health insurers face competition resulting from the increasing trend toward managed care, and at this point can't accurately predict their future until a decision is made on a national health care plan.

On the plus side, however, the late-1993 - 1995 turnaround in the economy and real estate market has increased revenue income. Annuities continue to have healthy growth, thus supporting the life insurance segment. In addition, insurance companies are taking steps to insure improved profitability through dramatic changes in the way they operate their businesses.

Most importantly, information technology continues to support positive change in the operation of this industry.

In addition to the claims automation opportunity highlighted above, another good example of the application of technology is in the opportunity provided by the Internet for widespread communications in the insurance industry.

First, the Internet will be used extensively for gathering and submission of claims to the various insurance providers. Further steps toward agent automation—including enabling agents to perform risk analysis and deliver clear, firm illustrations and quotes to potential customers in the field—will be more feasible through the use of Internet services. Finally, the user information services provided through the Internet have already resulted in the Insurance Information Institute (III) distributing insurance publications for consumers on the Internet. Titles such as “How to Save Money On Your Auto or Auto Insurance” and “Settling Insurance Claims After Disaster” are available now and updated regularly for the benefit of consumers; help lines are also provided.

D

Trends and Events

This section first describes the external events and trends affecting each of the three segments of the insurance industry. Then internal trends within the industry, largely in response to these external impacts, are discussed. Finally, IS technology trends, as they affect the insurance industry, are presented.

1. External Trends and Events

a. Property/Casualty Segment

There were over 3,500 insurance companies in the U.S. writing property/casualty insurance in 1994, with most business concentrated among 900 companies operating in all 50 states. A major impact on these companies has been high claims activity based on severe natural disasters.

Natural Disasters - The period from 1992 to 1994 was the worst on record for natural disasters, only a few years after 1989 had that dubious distinction. Disaster claims payments topped \$33 billion, as shown in Exhibit II-1.

EXHIBIT II-1

1992-1994 Catastrophic Events

Event	Insurance Claims (Dollars)
Hurricane Andrew	15-16 Billion
Northridge (L.A.) earthquake	11-12 Billion
Wind/tornadoes	2 Billion
Hailstorms	1.5 Billion
Other	1.5 Billion

As a result, many smaller companies went into bankruptcy, while others were driven away from underwriting property/casualty insurance. Many, such as Allstate, dropped property insurance offerings along the eastern seaboard and areas hardest hit by other catastrophes.

Overall, it is estimated that the ratio of what is paid out in claims compared with overhead per dollar of premium will soon begin to move in the right direction—from over 110% at year-end 1994, to under 100% in 1995.

Automobile Insurance Trends - Automobile insurance has traditionally been a drain on insurance providers due to a variety of factors, including unfavorable regulatory decisions by various states and the ongoing problem of fraud. However, despite those issues, consumers *are* changing their driving habits. Seat belt requirements in most states, along with consumer education regarding drinking and driving, are believed to be big contributors to the drop in the number of road fatalities. Claims costs have only risen 5% in the past two years, compared with 8%-10% in the mid-1980s.

Automobile repair industry consolidation is also helping to reduce costs of claims. In early 1995, Auto Info, Inc. announced that it had sold several of its divisions, including the Insurance Parts Locator Services product line, to ADP Claims Solutions Group. ADP is the leading processor of claims for the insurance industry. Over the years, ADP's use of information services and networks to help automobile insurers find parts and increase the efficiency of this industry segment has reduced overall costs of automobile repair.

b. Life Insurance Segment

In 1994, premium receipts for life insurers exceeded \$225 billion. Over 80% of all U.S. households have life insurance. Buyers buy term and whole life policies to provide death benefits, and for investment purposes. While whole life policies have been the traditional business of life insurance companies, there was a trend in the past several decades toward term insurance, which offered more flexible investment opportunities. This trend has since shifted back toward whole life products, but life insurers are selling policies at decreasing rates.

Life insurers also sell annuities that provide financial security for the future as buyers anticipate retirement. With pension plans less available than they have been in the past, along with a drop in job security, these investments are growing in popularity.

Because the life insurance business competes with banks and other financial institutions in selling investments to its customers, it needs to continually look at developing new products to remain competitive. In addition, existing products must be tailored to the buyer's needs.

A life and health industry CEO study conducted by the Life Office Management Association (LOMA) and Andersen Consulting in early 1993 showed continued industry consolidation, with more competition from banks and foreign companies. As with most other businesses, pressures to reduce costs will continue to be a factor.

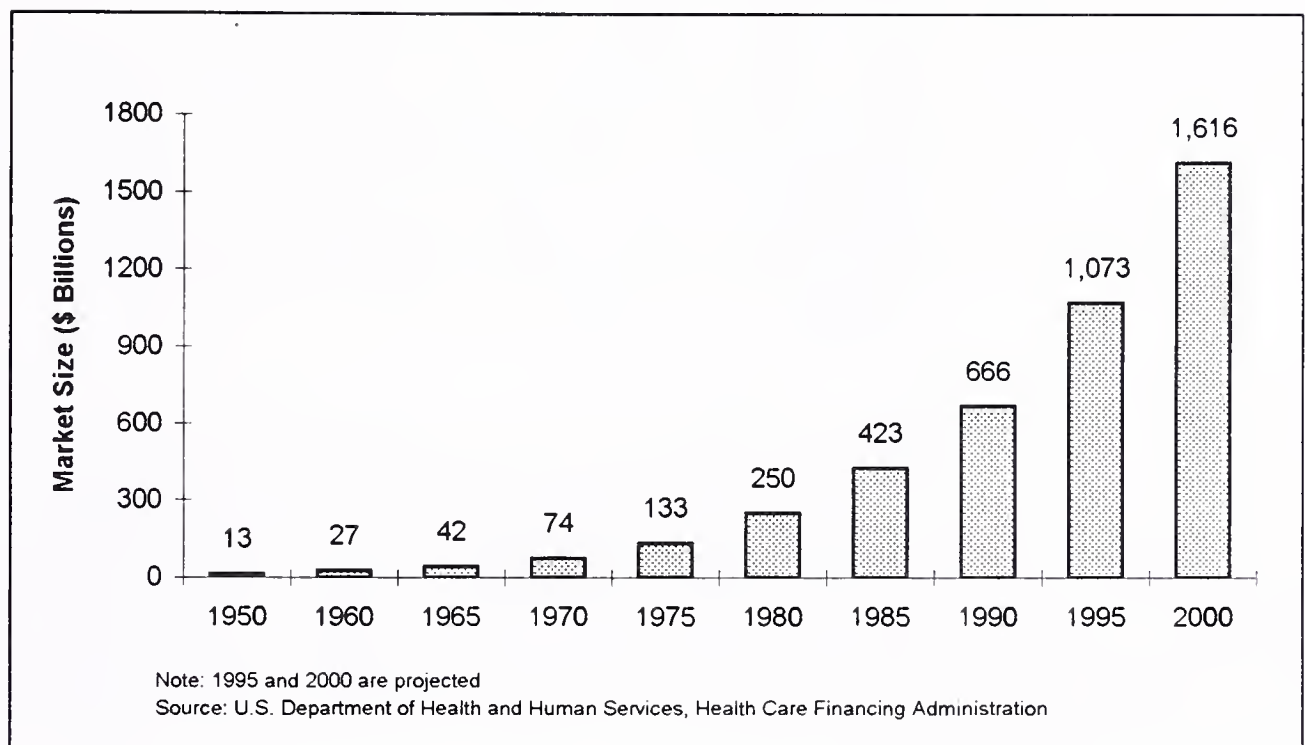
c. Health Insurance—National Health Care Crisis Continues

President Clinton continues to focus on health care reform as one of the key planks of his administration's program. Health care costs have been growing exponentially each year. In fact, they have grown faster than the economy for the past 30 years and in the past few years have represented 11%-12% of the GNP. The Health Care Finance Administration (HCFA) estimates spending in 1994 at nearly \$1 trillion and the trend shows only slight indications of slowing. The HCFA estimates that spending on health care will reach \$1.6 trillion by the year 2000. As the baby boomers begin to join the ranks of the elderly, the

problem will only get worse. The expenditures trend, as estimated by the HCFA, is diagrammed in Exhibit II-2.

EXHIBIT II-2

Health Care Spending



Source: INPUT

One reason for spiraling costs is the medical industry's increasing reliance on medical technology. Expensive medical equipment is used for both diagnostic and treatment purposes. Many believe that spending on such technology is excessive, with physicians often ordering duplicate and at times unnecessary tests and drugs without giving thought to the cost. However, given the high number of malpractice cases, some believe that physicians sometimes order procedures as insurance for themselves in case of future litigation. Even if cost for various medical services do increase, consumers have little incentive to "shop around" for the lowest price provider because they will not have to pay for it themselves, and costs are passed on to insurers and/or government programs such as Medicare.

The above discussion represents the heart of the argument driving health insurers, information services companies and government agencies to focus on health care claims and transaction-related information control the costs of medical treatment. Furthermore, analysis of claims transactions can yield information needed to provide better treatment as well as reducing costs of duplication and unnecessary procedures.

Despite all this spending on health care, over 13% of the population is not covered under any health plan at all. Because most Americans rely on

employer-provided health plans, rising unemployment in the past few years has meant more people "falling through the cracks" and not being insured at all. The government generally ends up bearing the burden of these health care costs in the form of the Medicaid program, but even at that, only 40% of the population living below the poverty line is covered by Medicaid.

In the 1970s and 1980s, the profits of health insurance companies rose along with the health care boom. However, rising cost issues led to the development of health maintenance organizations (HMO) and preferred provider organizations (PPO) in an attempt to contain costs. These managed health care approaches will be the foundation of health care reform for the future.

HMOs and PPOs are both based on organized networks of hospitals and doctors that offer discounts to groups of insureds such as employees of a large company. The employees are given incentives to use such provider networks by having to pay more for alternative services. Large commercial insurance companies generally manage such networks, tracking use and monitoring quality. Talk of purchasing groups and cooperatives also has insurance agents concerned for their financial future.

2. Internal Trends and Events

What are the insurance companies doing about these critical changes affecting their industry? In general, they are responding through restructuring, streamlining and redirecting their attention to their primary business, and by an increased focus on the customer.

a. Restructuring

The insurance industry has used the recession and industry setbacks as an opportunity to re-evaluate how it does business. Nearly every insurance company has taken a hard look at its organization and focused its attention on how to better structure itself to be successful and competitive in today's market. This method has often resulted in mergers, acquisitions, streamlining and reengineering of business processes.

Merger and acquisition activity has been ongoing. In 1993, Travelers Insurance Company sold a 27% interest to Primerica Corp., while Kohlberg Kravis Roberts and Co., an investment bank, bought Aetna Life and Casualty Company's American Reinsurance Co. subsidiary.

Travelers took a further important step in late 1994 by announcing that it would combine its health insurance operations with Metropolitan Life's

activities into Metrohealth. The two companies hope to be better able to compete with Cigna, Aetna, Prudential and other leaders in managed care.

Streamlining the business to reduce costs frequently leads to redesigning and reengineering business processes. In many cases, IS organizations have been the catalyst for this type of change. Efforts to reduce costs have led to many insurers rethinking their distribution system. Many are experimenting with direct mail as an alternative, and pressure at times is being put on agents to accept less commission or to increase prices. Information technology is seen as a cost-effective alternative for reducing costs and increasing the efficiency of underwriting, distribution, investment, claims, and administration activities.

b. Emphasis on Service

Many insurance companies have become large bureaucratic organizations. The industry's image has been that of a conservative, stodgy business that requires time to respond to even the simplest of requests. However, the industry has come to realize that to be profitable, like any other business, it must be responsive to customer needs.

Decisions to improve customer response generally lead to reliance on information systems and services tools that provide up-to-date data so as to improve response time to customer needs. The Internet will have an important role here as well.

c. Cost Containment

As reported above, the high cost of medical care is severely impacting employers' bottom lines. In response, over 85% of large private and public sector employers have utilization review (UR) programs in place, aimed at placing a financial and reasonability check on medical services. UR is a way of monitoring high-ticket or discretionary medical services for medical necessity: hospital precertification, continued stay review, second surgical opinions, etc. UR is growing at over 10% per year.

UR information services coincides with the implementation of PPO networks within employer-sponsored medical plans. PPO networks are comprised of doctors or hospitals that provide care at discount rates. UR with PPO management adds a measure of cost control along with the volume measures provided through UR programs.

Many large insurers have negotiated with providers to create regional PPO networks based on the combined buying power of their subscriber base. Independent UR providers (for example, Health Care Compare, a large national UR services firm) have also entered the business of

contracting with providers to join their PPO network. They in turn market these PPO networks to insurers or self-insured employers, based on a percentage of savings achieved, not the PPO providers' actual charges. Health Care Compare's PPO services revenue is growing far faster than its UR revenues, which are leveling off.

UR and PPO programs in the private sector are similar to service precertification procedures and provider reimbursement limits long used in public insurance programs. They are important to the future of health care electronic commerce because they modify the information flows within the industry and are an attempt to shift the economics of the health care industry.

3. IS Trends

Although IS has not been exempt from the cost cutbacks that have affected the insurance industry, IS technologies are playing a crucial role in supporting current trends. Insurance companies are relying on IS capabilities to respond quickly to customer needs, target marketing efforts and conduct business processes with fewer people than has previously been the case. In short, information systems provide the tools to streamline business processes.

Cutting costs is clearly a high priority in the industry. In addition, there is a desire to move technology into the hands of end users to allow agents to obtain needed data, marketing staff to analyze customer trends, and customer service staff to serve clients in a timely manner. As in other industries, these needs have led to a move toward the use of client/server technology and LANs.

Key trends impacting the insurance industry include linking technology to business strategy, cost reduction, reengineering, a move to distributed systems and client/server technology, and EDI/electronic linkage.

a. Linking Technology to Business Strategies

As insurance providers undergo a restructuring process, they rely on information systems departments to implement changes. For example, Travelers indicates that because information is actually its product, technology plays an integral role. As it moves forward (after the loss of 5,000 staff members) it is looking to information technology as a means of operating more efficiently with a limited staff. Simply stated, companies are expecting technology to support the streamlining of business processes. If insurers wish to react quickly to customer requests and complaints, they must use technology to facilitate action.

b. Reengineering

The restructuring discussed earlier has led to reengineering efforts, with companies analyzing business processes and evaluating alternative options. In the case of Blue Cross/Blue Shield of Virginia, for example, this has resulted in the movement of applications development off the mainframe to microcomputers using CASE tools.

c. Distributed Systems—Client/Server Technology

Increased attention to customer service is driving technology closer to the point of sale. Most insurers, that for years have relied on centralized transaction processing, are moving in the direction of distributed systems. While few have been so bold as to completely do away with the mainframe, they are recognizing the need for employees and agents to access data to support business decisions and respond to customer needs.

To reduce costs and remain competitive, companies are making decisions to consolidate data processing operations, reduce headcount and reduce hardware and software costs. Client/server architecture is becoming the technology of choice to address these concerns.

Midland Mutual Life Insurance Co. replaced its host with a PC network using SystemPro file servers. Midland reports that this allowed it to reduce staff from 55 to 22 in 1993.

AMEX Life reports that its implementation of LAN technology has yielded the multiple benefits of giving end users access to information, reducing both operating and processing costs and increasing efficiency. Its strategy is to move away from host-based systems to hub-oriented enterprise-wide networks.

d. EDI / Electronic Commerce

In INPUT's survey of 100 insurance providers, 53% indicated that electronic commerce was planned for at least one key application. In the insurance industry, such communications could also involve links between agents and their insurance companies. Northwestern Mutual Life Insurance Company, for example, announced that its agents would be using AT&T's InterSpan Info Access Service to share information with headquarters. Such a resource allows agents to access corporate applications and databases at high speed and reasonable cost.

Government regulation and the adoption of EDI standards are also paving the way for the use of EDI for claims processing as well as for other functions related to health insurance coverage and enrollment.

Exhibit II-3 lists the market forces driving the growth of electronic commerce in health care.

Exhibit II-3**Electronic Commerce in Health Care—Driving Forces**

- Government programs encouraging electronic medical claims processing, including EDI/EFT use
- Financial incentives: Health care costs are skyrocketing; major containment efforts are needed
- Large employers and the health care community are pushing for changes
- Increased collaboration among health care players
- Benefits are tangible; success stories are accumulating

Source: INPUT

E
Issues

The major issues affecting the insurance industry are noted below.

1. Fraud

Property/casualty companies are defrauded of an estimated \$15-20 billion per year. After tax evasion, insurance fraud is the second largest economic crime in the United States. Health care fraud totals more than \$50 billion per year. The Insurance Research Council directed a research study regarding compensation and disability fraud that found that 14% of workers between the ages of 18 and 24 "saw nothing wrong" with filing false claims, and 17% condoned remaining off the job to collect benefits, even when they are able to return to work.

Despite these losses, there has been little concentrated effort or success in reducing insurance industry fraud. In 1993, a group called "The Coalition Against Insurance Fraud" was formed. It includes insurers, regulators and consumer advocates to address this problem. It uses lobbying efforts and public education to deal with the problem.

2. Regulation and New Competition

Although insurance companies are regulated at the state level, the insolvencies and real estate delinquencies of recent years have led to a number of bills being introduced at the federal level to exert more national management over the industry, including such initiatives as solvency standards. Many believe that in these times, with insurance

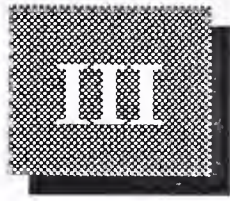
being a national and increasingly global business, insurance should be regulated at the federal level.

There is also another side to regulation. Banks have traditionally been prevented from providing other financial services, such as selling insurance to their customers. This is a result of the Glass-Steagall Act passed in the 1930s. The effect is to restrict banks to traditional banking activities. However, in the current Congress, several bills have been introduced that would allow banks to compete with insurance companies, brokers and other financial services providers. This is bound to have a dramatic impact on the competition and prices for insurance products of all types.

3. The Changing Buyer

Within insurance companies today, the buyer of IS products and services is often outside of the traditional IS department. One recent estimate showed that the average, non-MIS department in financial services industries on the whole spent more than \$2 million on hardware, software and outside services. In recognition of this trend, vendors need to develop relationships with the business units themselves as they market their products and services to the insurance industry. These buyers expect the vendors with whom they do business to understand industry-oriented applications and be able to develop appropriate solutions.

(BLANK)



Information Services Market

Chapter III discusses the expenditures for information services in the insurance sector. User expenditure forecasts are provided by product/service category, and the assumptions driving the forecasts are presented. Note that these forecasts do not include functional, general-purpose information services, such as those that support human resources, accounting or generic planning and analysis activities. The markets for these types of information services are presented in INPUT's series of cross-industry Market Analysis Program reports, rather than in the industry-specific reports.

Note that the numbers used in the exhibits are rounded. Precise values are used in both the text and Appendix A, the Forecast Database.

Section A, Overview, notes the overall size and growth rate of the insurance market's expenditures for information services. Section B, Product/Service Category Analysis, segments the data into INPUT's seven standard product/service categories.

Section C, Industry Segment Analysis, discusses the forecast in terms of the major market segments within the insurance industry. These segments are:

- Property and casualty carriers (P&C)
- Life and health carriers, including the non-profit, state-based Blue Cross/Blue Shield organizations (L&H)
- Independent agents and brokerages (Agents)

A

Overview

A number of business and technical forces are impacting the insurance industry's use of information services in 1995 and beyond. This section summarizes the driving and inhibiting forces and notes INPUT's overall information services expenditures forecast for the insurance sector market.

1. Driving Forces

Strategic Information Systems - These systems support improved cost control, competitive positioning (such as faster or higher quality service) or respond to customers 'and prospective customers' increasingly complex information requirements. They are critical today in this industry. Agents selling in people's homes, for example, are finding that the laptop computer hardware and software permits instant development of a firm price quotation and can lead to closing a sale on the first visit.

Other strategic information systems include automation of claims submission and processing. As identified earlier in this report, such systems now permit marketing of manufacturers' products such as drugs directly to doctors and other providers in on-line mode to dramatically increase the competitive position. In addition, such systems provide the basis for cost analysis leading to better managed care and cost containment.

Emphasis on Customer Service - Responsiveness to the customer is a critical goal for insurers as they attempt to survive in these uncertain economic times and differentiate their products and services from those of their competitors. In order to be responsive to customer inquiries and react quickly to requests for quotes and other information, insurers are moving away from traditional mainframe-based operations to an environment that puts information into the hands of those who work closest with the customer. This is a considered reaction to the competitive reality that agents, claims personnel, underwriters and others need to have up-to-date information in order to be responsive to the customer. Management needs to be able to review data in a timely manner for effective decision making. It is this emphasis on customer service that is driving the move toward a distributed environment and spurring interest in client/server technology.

Restructuring/Cost-cutting - As insurance companies have found it necessary to restructure their organizations to focus on only their most successful products and in many cases redesign business processes, information technology is starting to play a dominant role. Insurers are

looking to information technology to support more streamlined operations that can react faster in addressing problems. Software tools are needed for insurers to perform the ongoing analysis needed to support market segmentation. Agents need to constantly evaluate profitability and monitor sales of various products. Information systems are what makes much of this possible.

The need to cut costs and the limited availability of capital during these difficult times are making outsourcing an option that insurers believe they need to consider. While there is still general resistance to the idea of handing over control of key resources to someone else, the realities of today's business are forcing many companies to consider this alternative.

Agent Automation - Electronic networking of insurance policy data between carriers and independent agents finally appears ready for implementation in the 1990s, based on new electronic standards promoted by industry standards groups. There are requirements for building an infrastructure to support agents in the field by giving them a sales support system and by networking with and between offices. In addition, artificial intelligence and expert systems are expected to play an increasingly important role in applications such as underwriting, risk management, investment planning, policy customization, and health services review analysis.

Replacing Legacy Systems - Over the years, insurers have invested in large- scale mainframe systems to support their operations. These systems, however, are getting old and the structure of the business is changing.

As a result, insurers are now moving from reliance on central mainframes toward a more highly networked environment with more distributed intelligence. In most cases, the mainframe will be retained as a central database system. Systems networking will be a key for access to databases and for use by PCs, workstations and file servers as part of new client/server architectures for reengineered information systems.

Availability of Industry- Focused Services - The insurance industry much sought after by information services vendors who are increasingly tailoring IS solutions to address needs unique to this business area. Major IS vendors such as ISSC and EDS have targeted insurance as a key market for outsourcing services. ISSC and Continuum recently negotiated an agreement to offer outsourcing services to the insurance market, taking advantage of ISSC's systems operations expertise and Continuum's knowledge of insurance applications. Alicomp, formerly part of the IS organization at Amalgamated Insurance, has teamed with CBS to offer outsourcing to insurers. The availability of these services,

tailored to the industry's unique needs, will drive the increased use of such services.

2. Inhibiting Forces

Economy - With record-breaking claims payments, low returns on investments and the aftermath of the junk bonds scandal, insurance companies have had to make some hard decisions-including budget cuts, layoffs and re-evaluation of property underwriting in areas where hurricanes (and other natural disasters) are a fact of life.

Insurers are looking to reduce IS costs, not increase them. This emphasis on cost cutting makes it more difficult to get new projects approved and delays decision making on the acquisition of information services.

In-house Operations - Insurers have a long-standing tradition of developing and maintaining their information systems internally. While circumstances may drive them to use more outside services, many insurers are concerned about giving up control over systems that drive their business and are therefore resistant to the use of outside services. As one IS vendor put it, its biggest competitor is internal data processing operations.

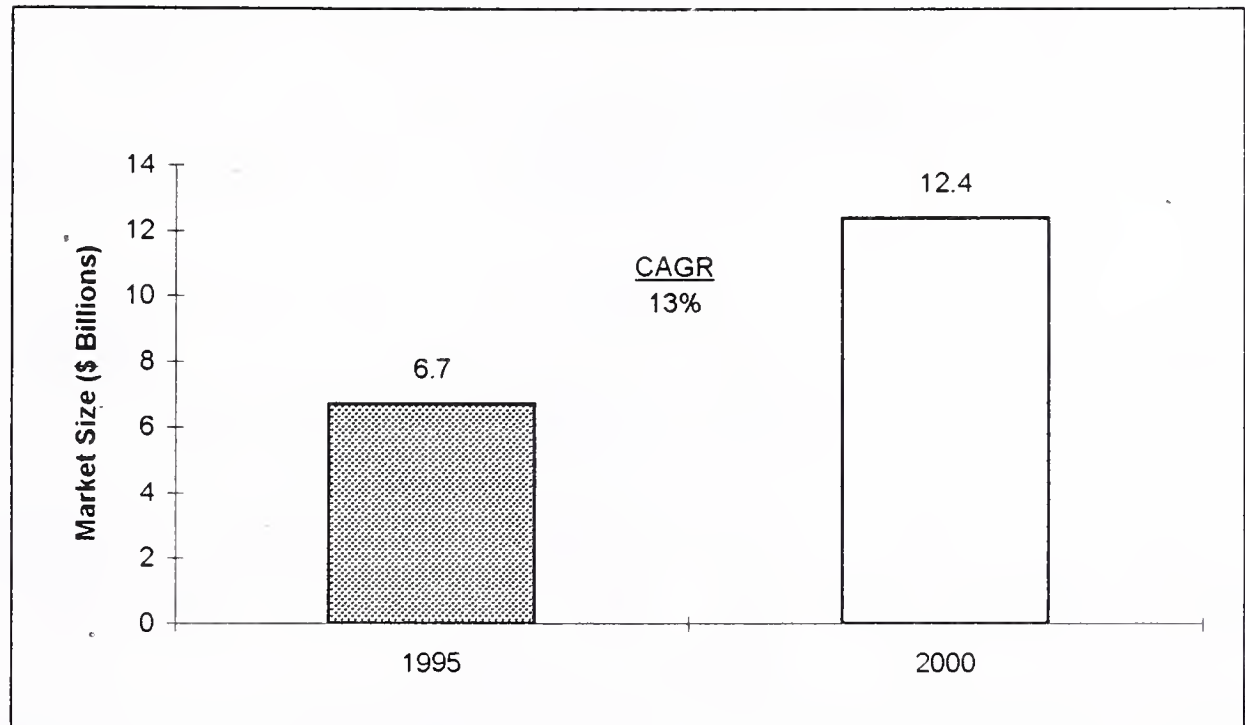
Health Care Reform - Revamping the U.S. health care industry has all parties involved with health care, including insurers, in a state of confusion over how the claims/reimbursement process for health care will be handled in the future. It is unclear what the role of insurers will be in the future, and, therefore, companies remain reluctant to make decisions related to technology (or anything else) until this situation is clarified or resolved.

3. Information Services Market

Based on these driving and inhibiting forces, INPUT projects the 1995 and 2000 information services market for the insurance industry as shown in Exhibit III-1.

Exhibit III-1

Insurance Sector, Information Services Market, 1995-2000

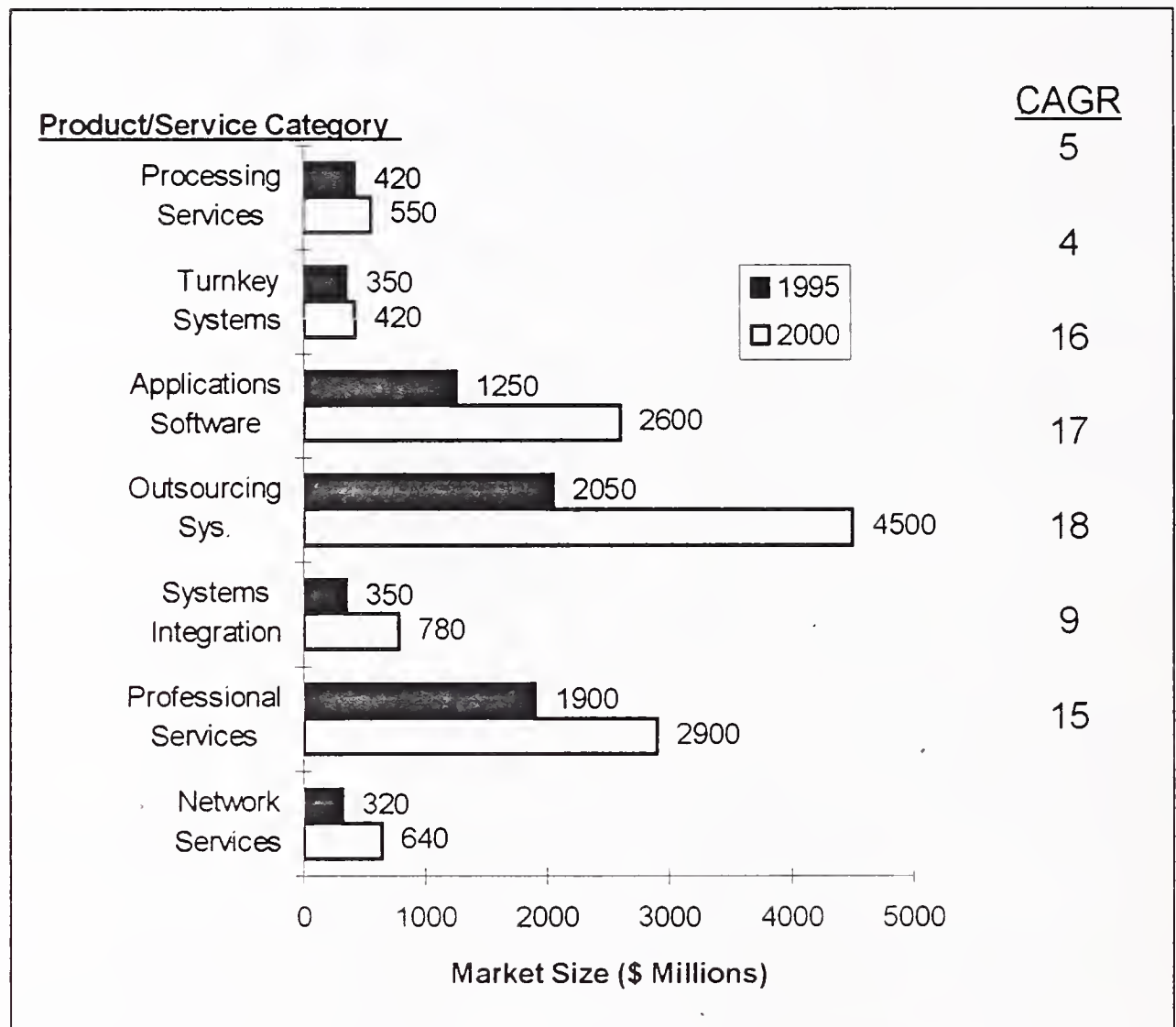


Source: INPUT

Year-by-year detail is shown in the forecast database (Appendix A). INPUT estimates that 1995 expenditures will be 12% more than those in 1994, with a compound annual growth rate (CAGR) of 13% from 1995 to 2000. This represents expenditures of \$6.0 billion in 1994 growing to \$12.4 billion in 2000. This growth is driven primarily by the systems operations, applications software, systems integration and network services product/service categories as seen in Exhibit III-2.

Exhibit III-2

Information Services Market, 1995 and 2000



Source: INPUT

B

Product/Service Sector Analysis

1. Processing Services

Processing services refers to the use of remote mainframe-based data centers for administrative and policy/claims processing. Such services charge customers based on the usage of the system. Insurance companies, particularly those in the small and mid-sized range, have made use of such services over the years. Many of these companies were not in a position, in the past, to invest in the large scale systems that dominated the industry and, therefore, processing services presented a cost-effective processing alternative. Larger companies also have made use of such services for special applications.

A significant amount of processing services business comes from Medicare/Medicaid processing, generally contracted for through the Blue Cross organizations and through state governments. These organizations tend to outsource processing to larger organizations such as EDS.

However, the use of processing services across industries has declined in recent years, as the availability and affordability of PCs and associated software and networking has made it effective for companies to invest in internal systems. Though insurers will continue to make use of processing services, its rate of growth is anticipated at a modest 5%, growing from more than \$420 million in 1994 to almost \$550 million in 2000 (see Exhibit III-2).

2. Turnkey Systems

Historically, turnkey systems (bundled hardware and software solutions) have been based on minicomputer hardware platforms and have been most frequently used by smaller firms, as has been the case with processing services. Once again, however, the increased availability of affordable PC hardware and software has made it a more appropriate business decision to purchase hardware and software separately. With a turnkey system, the buyer is limited in options to the capabilities of the hardware provided and is generally tied into a proprietary solution. Though turnkey solutions will continue to be the best solutions to some specialized requirements, the rate of growth of these systems is also expected to be modest. Expenditures for 1995 are expected to be slightly more than \$350 million, a 5% increase from 1994. Growth through 2000 will be a modest 4% per year.

3. Applications Software Products

Unlike processing services and turnkey systems, applications software is expected to enjoy a healthier rate of growth in the coming years, particularly on workstation platforms. As mentioned earlier, many insurance companies have long-standing legacy systems developed to meet the business requirements of earlier decades. However, business operations and, the direction of technology have changed, and insurers now find themselves needing to upgrade and replace these systems to meet today's requirements. While there is a well-documented tendency in the insurance industry for IS organizations to develop their own software, these companies are increasingly looking at the ability of packaged solutions to meet their needs. In INPUT's survey of 100 insurance companies, 35% of the respondents were planning to use packaged software solutions for new applications. With budget cutbacks, many companies simply cannot afford the high cost of maintaining large in-house programming staffs.

The need for software is also fueled by the increasing need to make data more available to agents and employees who are using PCs and purchasing laptops requiring PC-based software to analyze the information provided in company databases.

Agencies rarely develop their own software, as they are typically small to mid-sized businesses that cannot support an internal technical staff. As agents make more use of technology, they will look to outside vendors for the application software needed.

As seen in Exhibit III-2, expenditures on applications software products in 1995 are projected to be more than \$1.25 billion, a 13% increase over 1994. By 2000, these expenditures are expected to grow to over \$2.6 billion, at a CAGR of 16%.

Due to advances in the functionality and affordability of PCs and workstations, along with the increased penetration of LANs and client/server architecture, the major growth in applications software will be for PC-based products.

While client/server technology is driving growth at the PC level, expenditures on mainframe systems are also expected to grow as companies continue to make use of these systems as part of their overall architecture. In INPUT's survey, 40% of the companies planned to implement new applications on the mainframe.

The minicomputer platform shows the smallest rate of applications software growth, with expenditures of slightly more than \$130 million in 1995, growing to \$180 million in 2000—a CAGR of only 6%.

4. Outsourcing

System operations, now called outsourcing, represents the greatest opportunity for information services growth in the insurance industry. This opportunity exists despite the general resistance that this industry traditionally has had to outsourcing. Insurers are reluctant to hand over to outside parties the management of the complex, internally developed systems upon which the business depends. However, at the same time, this industry has a strong need to cut costs. Many of its systems need to be replaced at a time when companies are trying to keep capital expenditures at a minimum. Other industries, such as banking—which have faced problems similar to those encountered by the insurance industry—have embraced outsourcing.

In addition, many vendors are developing outsourcing services geared specifically to insurers. EDS supports many Blue Cross organizations, as well as Jackson National Life Insurance Co. Alicomp and CBS have undertaken an outsourcing venture capitalizing on Alicomp's first-hand insurance knowledge, obtained as part of Amalgamated Life Insurance Co. ISSC and Continuum have announced an agreement to provide outsourcing services to life insurers, and it is expected that health insurers will spearhead additional outsourcing activities.

Outsourcing growth is forecast at a strong 17% CAGR, going from more than \$2 billion in 1995 to almost \$4.5 billion in 2000.

5. Systems Integration

On a systems project, systems integrators act in a role similar to that of a general contractor. In this capacity, they assume project management responsibility and generally bear some financial risk for the success of the project. Despite the reluctance of insurers to rely on outside expertise as they plan new systems, the complexities of today's information services technology are expected to drive insurers toward increased dependence on such services. In addition, as insurance companies move toward implementing new technologies and applications with fewer IS staff onboard, the use of a systems integrator to develop the best solution to their specific needs becomes more attractive. The market for systems integration services is expected to increase by 17% in 1995, raising expenditures from \$300 million in 1994 to \$350 million in 1995. The CAGR for the 1995-2000 period is projected at 18%.

6. Professional Services

Professional services companies will play a role in helping to define objectives and implement IS projects. As insurers move toward updating legacy systems and evaluating newer technology options such as imaging, EDI and client/server options, such expertise will be needed for a number of reasons. Insurers are operating with smaller staffs and therefore have fewer resources to assign to evaluation of alternatives. Agents and brokers do not typically have in-house resources to direct them. And, in many cases, in-house staff will have limited, if any, experience with these newer technology options. Professional services firms, particularly those that specialize in planning and implementing these systems for insurers, have an opportunity to provide services to fill such gaps.

Growth through 2000 is forecast at a steady 9%, going from slightly more than \$1.9 billion in 1995 to \$2.9 billion in 2000.

7. Network Services

Despite the historical limited use of general-purpose, value-added packet network services, the insurance industry is looking toward network services as a means to support several of its key business goals, such as competitive advantage, improved customer services, and increased operational efficiency, especially for claims automation and EDI. As companies strive to be responsive to customers, the need to put information in the hands of the person closest to the customer is becoming more important. Agents need to have up-to-date information from the insurer's customer database and are using laptops to develop quotes and

close deals on the spot. These activities are best served through the use of communications networks. Expenditures on network services in 1995 are projected to be \$320 million, a 14% increase over 1994. By 2000, expenditures in this category are expected to be more than \$640 million, a CAGR of 15%.

Due to the need to both operate efficiently and comply with government requirements, the use of EDI technology for claims processing, along with qualifying and signing new members to health programs, seems well on its way to becoming a reality within the next three to five years.

C

Industry Segment Analysis

The life/health segment is responsible for the largest percentage of projected expenditures, generating \$3.8 billion in 1995 and growing to \$7.1 billion in 2000. This trend is due to both the size of this segment and the expected increases in the use of technology—particularly in the health care segment. Federal requirements for on-line claims processing, along with cost containment plans for a national health care program, are expected to have dramatic effects on the use of technology within this market segment.

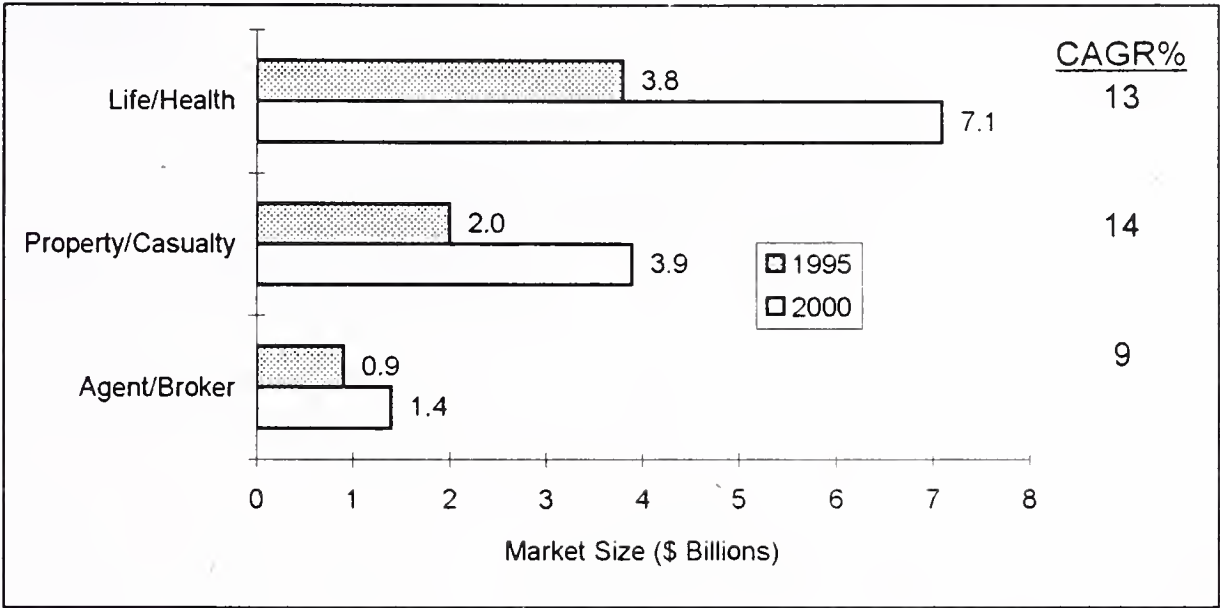
The property/casualty segment is the next largest, with expenditures of \$2.0 billion projected for 1995, growing to \$3.9 billion in 2000.

Agent broker expenditures are the smallest segment, reflecting the size of these businesses, limited use of technology and the dependence on the large insurers to provide technology solutions. However, expenditures in this category are still expected to reach \$1.4 billion by 2000.

The industry segment growth for information services spending is summarized in Exhibit III-3.

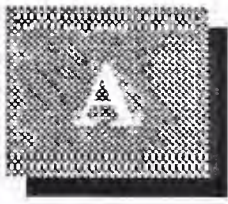
Exhibit III-3

Insurance Industry Segment Growth, 1995-2000



Source: INPUT

(BLANK)



Forecast Database and Reconciliation

A

Forecast Database

Exhibit A-1 presents the detailed 1994-2000 forecast for the insurance sector.

Exhibit A-1

Insurance Industry
Market Size by Product/Service Category, 1994-2000

PRODUCT/SERVICE CATEGORIES	1994 (\$M)	Growth 94-95 (%)	1995 (\$M)	1996 (\$M)	1997 (\$M)	1998 (\$M)	1999 (\$M)	2000 (\$M)	CAGR 95-00 (%)
INDUSTRY TOTAL	5982	12%	6671	7526	8528	9642	10940	12444	13%
Professional Services	1765	9%	1918	2096	2293	2487	2704	2942	9%
- IS Consulting	455	11%	505	566	634	710	788	874	12%
- Education & Training	260	11%	289	317	349	388	430	478	11%
- Software Development	1050	7%	1124	1213	1310	1389	1486	1590	7%
Systems Integration	298	17%	349	411	485	565	666	782	18%
- Equipment	49	16%	57	67	79	91	106	122	16%
- Software Products	28	18%	33	39	46	53	63	74	18%
- Professional Services	215	17%	252	297	350	410	484	571	18%
- Other	6	17%	7	8	10	11	13	15	16%
Outsourcing	1778	15%	2045	2385	2792	3268	3830	4485	17%
- Platform Operations	637	10%	700	770	855	941	1035	1128	10%
- Applications Operations	615	16%	713	849	1010	1192	1395	1618	18%
- Desktop Services	208	18%	246	294	348	418	501	602	20%
- Network Management	179	21%	217	264	322	400	504	640	24%
- Application Management	75	20%	90	108	129	152	179	209	18%
- Business Operations	64	23%	79	100	128	165	216	288	30%
Processing Services	406	4%	424	447	474	499	525	545	5%
- Transaction Processing	406	4%	424	447	474	499	525	545	5%
Network Services	281	14%	319	365	420	481	556	643	15%
- Electronic Information Sv	216	12%	241	268	302	339	383	435	13%
- Network Applications	65	20%	78	97	118	142	173	208	22%
Applications Software	1117	13%	1263	1454	1683	1947	2251	2627	16%
- Mainframe	364	4%	380	410	441	470	500	532	7%
- Minicomputer	128	4%	133	143	152	162	171	180	6%
- Workstation/PC	625	20%	750	901	1090	1315	1580	1915	21%
Turnkey Systems	337	5%	353	368	381	395	408	420	4%
- Equipment	145	2%	148	152	154	157	160	163	2%
- Software Products	131	7%	140	147	154	161	167	173	4%
- Professional Services	61	7%	65	69	73	77	81	84	5%

B

Reconciliation

The reconciliation of the figures for the 1994 and 1999 markets is shown in Exhibit A-2. The paragraphs below address forecast variations for the two years.

1994 Market - Actual expenditures for 1994 were 4% greater than projected in INPUT's prior forecast. This is mainly due to an increase of 11% in expenditures on outsourcing as compared with forecasted figures. As noted earlier, outsourcing contracts involve such significant expenditures that even a few companies deciding to outsource can dramatically affect services expenditures.

1999 Market - Overall information services expenditures for 1997 are expected to be 5% greater than projected in the prior report due to the expected growth in the professional services and outsourcing areas. Expenditures for professional services in 1999 are 9% more than projected in last year's report primarily due to new systems for claims processing. Expenditures for outsourcing are expected to be \$3.8 billion, as compared with INPUT's projections of \$3.5 billion in the prior report.

Exhibit A-2

Insurance
1995 MAP Database Reconciliation

Product/Service Category	1994 Market				1999 Market				94-99	94-99
	1994	1995	Variance From		1994	1995	Variance From		CAGR	CAGR
	Market	Report	1994 Forecast		Market	Report	1994 Forecast		per data	per data
	(Fcst)	(Actual)	(Fct)	(Fct)	(Fct)	(Fct)	(Fct)	(Fct)	94 Rpt	95 Rpt
	(\$M)	(\$M)	(\$M)	(%)	(\$M)	(\$M)	(\$M)	(%)	(%)	(%)
Total	5732	5982	250	4%	10434	10940	506	5%	13%	13%
Professional Services	1700	1765	65	4%	2470	2704	234	9%	8%	9%
Systems Integration	288	298	10	3%	641	666	25	4%	17%	17%
Outsourcing	1600	1778	178	11%	3533	3830	297	8%	17%	17%
Processing Services	410	406	-4	-1%	538	525	-13	-2%	6%	5%
Network Services	280	281	1	0%	530	556	26	5%	14%	
Applications Software	1112	1117	5	0%	2295	2251	-44	-2%	16%	15%
Turnkey Systems	342	337	-5	-1%	427	408	-19	-4%	5%	4%

C**1994-1999 Forecast**

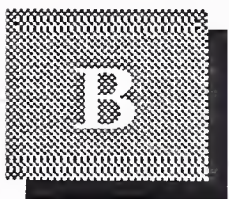
Although a full report on the insurance industry was not published in 1994, the industry forecast of information services expenditures for the appropriate period, 1994-1999, was completed. For continuity, and because it is the base against which this year's forecast (1995-2000) is reconciled, a copy of the 1994-1999 forecast is included in this Appendix as Exhibit A-3.

Exhibit A-3

Insurance
Market Size by Product/Service Category, 1993-1999

PRODUCT/SERVICE CATEGORIES	1993 (\$M)	Growth 93-94 (%)	1994 (\$M)	1995 (\$M)	1996 (\$M)	1997 (\$M)	1998 (\$M)	1999 (\$M)	CAGR 94-99 (%)
INDUSTRY TOTAL	5249	9%	5732	6426	7222	8145	9206	10434	13%
Professional Services	1600	6%	1700	1831	1971	2125	2291	2470	8%
- IS Consulting	403	10%	445	491	542	598	660	728	10%
- Education & Training	232	10%	255	281	309	341	375	413	10%
- Software Development	965	4%	1000	1059	1120	1186	1256	1329	6%
Systems Integration	245	18%	288	338	396	465	545	641	17%
- Equipment	39	23%	48	56	65	76	88	103	16%
- Software Products	22	23%	27	31	36	42	49	57	16%
- Professional Services	179	16%	207	244	287	338	398	469	18%
- Other	5	20%	6	7	8	9	10	12	15%
Outsourcing	1427	12%	1600	1872	2191	2569	3011	3533	17%
- Platform Operations	574	9%	627	723	833	961	1108	1277	15%
- Applications Operations	522	14%	593	686	794	920	1064	1232	16%
- Desktop Services	179	12%	200	239	285	340	406	485	19%
- Network Management	152	18%	180	224	279	348	433	539	25%
Processing Services	395	4%	410	433	457	483	510	538	6%
- Transaction Processing	395	4%	410	433	457	483	510	538	6%
Network Services	258	9%	280	317	360	409	465	530	14%
- Electronic Info Svcs	193	11%	214	238	265	294	327	364	11%
- Network Applications	65	2%	66	79	95	115	138	166	20%
Applications Software	997	12%	1112	1278	1474	1704	1976	2295	16%
- Mainframe	351	4%	366	401	439	481	528	578	10%
- Minicomputer	126	4%	131	138	146	155	164	173	6%
- Workstation/PC	520	18%	615	739	889	1068	1284	1544	20%
Turnkey Systems	327	5%	342	357	373	390	408	427	5%
- Equipment	145	1%	147	151	154	158	162	166	2%
- Software Products	124	7%	133	140	148	156	165	174	6%
- Professional Services	58	7%	62	66	71	76	81	87	7%

(BLANK)



Vendor Competition

A

Introduction

Information services vendors serving the insurance sector are described in this appendix. Although not normally included as a chapter in a forecast update (this 1995-2000 insurance sector report), the analysis in this appendix was completed as part of the examination of the competitive climate for vendors of information services to the insurance industry and is included as an addition to the normal trends, issues and market forecast sections. The appendix is divided into the following sections:

- Competitive Climate
- Competitive Positioning
- Leading Vendors

B

Competitive Climate

The competitive climate in insurance is influenced by changes in technology and a dramatic shift in insurance company operational focus. Insurance companies are making customer service their primary focus, with an eye toward reduction of costs. This shift is affecting all aspects of the insurance business and the vendors who serve it.

Technology shifts in the insurance sector have driven increasing acceptance of external information systems products and services. There also has been a growing acceptance of client/server technology, as insurance companies migrate from legacy mainframe systems. One key area for client/server implementations has been agent automation and interaction with company headquarters.

More than 30% of companies surveyed are moving to a client/ server model according to an INPUT survey of end users, especially in the area of field agent interactions. This client/server opportunity requires information systems vendors to exhibit expertise with networks, mobile computing, the use of notebooks and distributed databases, and pen-based computing.

Insurance companies are now also assessing the competitive importance of moving away from legacy systems. The migration from legacy systems presents a huge opportunity for vendors offering software solutions, systems integration and outsourcing services. This migration also poses an opportunity in business process reengineering and training. Some areas of opportunity are executive information system applications, decision support systems and data access tools.

Information systems and services vendors participating in the insurance sector need to understand that systems purchase decisions are shifting to the departmental or end-user level, away from the more traditional single point of contact in the information systems staff. Consequently, purchasing patterns are shifting and it is increasingly important that information services vendors demonstrate industry knowledge.

C

Competitive Positioning

As technologies and architectures shift in the industry, many vendors are facing a steep investment when they consider the migration of their product sets away from the mainframe environment.

Experienced personnel also are becoming crucial for competitive positioning, as clients ask vendors for demonstrable industry and technical expertise in new technologies like imaging, mobile computing, and client/server architectures.

Competitive trends and areas of opportunity in specific product/service areas include:

1. Processing Services

Industry consortia are participating in the delivery of processing services. Processing services vendors are also noting increased interest by the regional Bell operating companies (RBOCs).

One area of opportunity in claims processing is workers compensation, one of the last health claims areas to come under cost containment scrutiny. Legislation that essentially "deregulates" workers

compensation companies has recently been enacted in California, with several other states soon to follow.

2. Applications Software

Changes in application platforms, and the importance of system integration and professional services bundled with these applications, make competition in this segment intense.

3. Professional Services and Outsourcing

Growth in professional services contracts and outsourcing has been driven by data center consolidation, a subsequent reduction in information services budgets, and projected reductions in hardware and software costs.

4. Systems Integration

Systems integration services offered to the insurance market are characterized by increased competition and high return. The systems integration market is growing rapidly. Key factors for vendors are: knowledge of the key business issues for the industry, experience in implementing solutions in the industry, and the ability to deliver distributed open solutions in a complex networked environment.

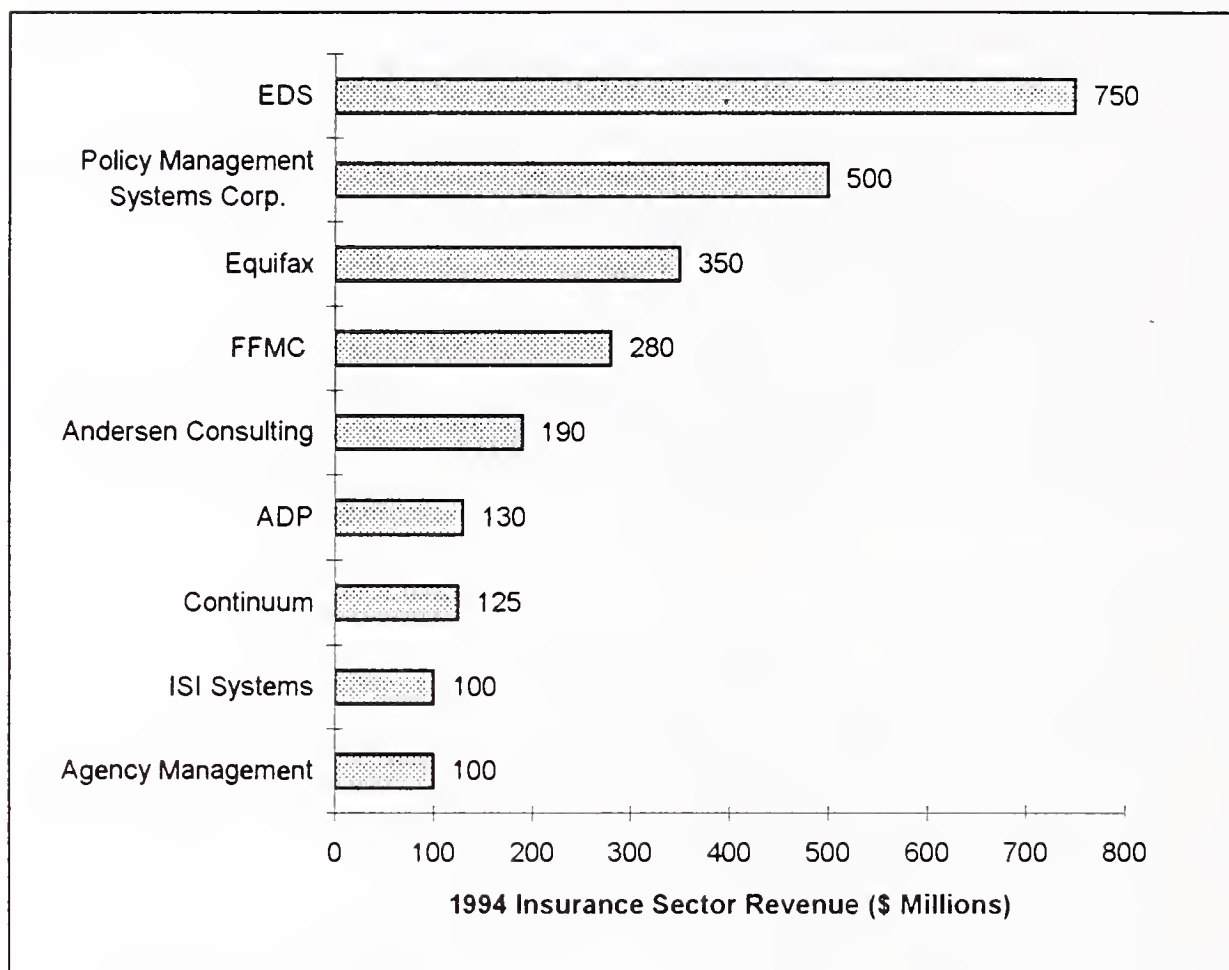
D

Leading Vendors

The following exhibit presents INPUT's estimates of the leading information services vendors in the insurance sector. The vendors in the professional services market are diverse and include Big 6 firms, subsidiaries of industrial firms, computer hardware firms and vendors dedicated to professional services.

Exhibit B-1

Leading Vendors to the Insurance Sector - 1994



Source: INPUT

E

Vendor Profiles

The profiles offered in this section provide company background, strategy, product and service and key issue data for two of the largest vendors and one emerging vendor to the insurance market.

1. Electronic Data Systems, Inc.

7171 Forest Lane

Dallas, TX 75230

Phone: (214) 604-6000

Fax: (214) 604-6545

Status: Wholly Owned Subsidiary, General Motors Corporation

Total 1994 Revenue: \$10.1 billion

Non-GM Revenue: \$6.6 billion

a. Company Background

Founded in 1962, EDS has grown to become a world leader in the application of information technology (IT), providing information

processing, systems management, systems integration, systems development, consulting, software products, and process management services to customers worldwide. EDS serves public and private organizations in the following industries: banking and finance, communications, energy, government, health care, insurance, manufacturing, retail, and transportation.

b. Strategy

EDS' strategies include the following:

- EDS addresses the insurance market by providing comprehensive product and service offerings. These products are offered through three different business units in EDS—insurance, state and local government, and health care.
- EDS is focusing on offering companies providing health, life and property and casualty insurance a service designed to examine their business practices as well as design and plan information systems. This reengineering focus provides an overall framework.
- EDS has established a technology service center in Urbandale (IA), that will provide insurance companies with document processing technology on a shared basis.

c. Products and Services

State Operations Divisions - EDS' State Operations Division, headquartered in Herndon (VA), provides consulting, systems development, systems integration, systems management, and process management services to various state government agencies in over 25 states and the District of Columbia, and has more than 100 local government customers nationwide. EDS supports a range of areas, from health care and human services to transportation, justice, education, and the environment.

EDS currently provides Medicaid claims processing services for 18 states and processes more than two-thirds of all Medicaid claims submitted in the U.S. EDS also supports states' managed-care initiatives.

Insurance and Health Care - EDS provides a range of services to commercial insurance companies, Blue Cross and Blue Shield organizations, and managed care groups. During 1994, EDS processed over 600 million health care claims covering over 60 million individuals. EDS offers a complete set of products and services to companies and state and local governments providing health care insurance and benefits processing. In addition to the Total Plan System (TPS) product line for

private insurers, EDS also offers a managed care alternative called TOPPS.

Contract awards in the past three years include the following:

- EDS extended its 22-year association with Blue Shield of California with an agreement to install advanced membership and claims systems and a management database information reporting system.
- Under a 10-year systems management agreement, EDS assumed responsibility for all information technology services at Blue Cross and Blue Shield of Massachusetts.
- EDS signed an expanded agreement with Fremont Pacific Insurance Group, one of the top 20 providers of workers compensation insurance in the U.S.
- In 1992, EDS signed an agreement with The Freedom Group (TFG), a provider of insurance industry software systems and services. This alliance combines TFG's property and casualty software products and third-party administration experience with EDS' consulting, systems integration, and systems management expertise.
- In early 1993, EDS was awarded a three year contract with Blue Cross and Blue Shield of Texas to install and upgrade its Medicare claims processing system and provide ongoing consulting and maintenance.
- Also in 1993, EDS was to provide an imaging and intelligent character recognition (ICR) system for Sanus Corp. Health System, a managed care company. This was the first imaging and ICR agreement EDS signed with an HMO and builds on EDS' existing imaging and ICR installations at several Blue Cross and Blue Shield Plans.

d. Key Issues

- Reengineering a new framework for EDS products and services
- EDS is well positioned to address the changing demands of the health care market. EDS' flexible system design is positioned for the health services sectors' transition to managed care.
- Can EDS use its extensive claims data base and industry knowledge to enter the Medicare (or other) insurance business, thus competing with its customers?

2. Policy Management Systems Corporation

P.O. Box 10
Columbia, SC 29202
Phone: (803) 735-4000
Chairman, President,
and CEO G. Larry Wilson
Status: Public
1994 Total Revenue: \$493 million

a. Company Background

Policy Management Systems Corporation (PMS) provides processing and electronic information services, applications software products, and associated support services to the insurance industry.

PMS was formed in 1974 as the PMS Division of Seibels, Bruce & Company. Data processing and related services were provided to Seibels on the basis of actual cost, which did not include a profit factor.

Currently, Seibels' holdings represent less than 1% of the outstanding common stock of the company.

Prior to 1989, PMS and IBM had worked together under various agreements. In 1989, this relationship was strengthened through IBM's acquisition of a 19.8% minority equity interest in PMS for \$116.8 million.

In May 1994, PMS repurchased approximately 2.28 million of the 3.8 million shares of its common stock held by IBM, for \$56.5 million. The remaining PMS shares owned by IBM are being purchased by the General Atlantic Partners group, a New York-based private investment firm. The move was part of IBM's strategy to selectively liquidate its portfolio of minority-interest investments.

PMS has attributed a 50% drop in health insurance product/service revenue during 1993 primarily to the uncertainty regarding national health care reform initiatives. PMS has taken actions to bring this business to a break-even position during 1994, including writing off certain software and downsizing staff and facilities. Financials for 1993 reflect impairment and restructuring charges totaling \$80.7 million related to these actions.

PMS expanded its product and service offerings to the life insurance industry with the August 1993 acquisition of CYBERTEK, a Dallas-based software and services firm with more than 100 life insurance company clients.

In December 1993, PMSC signed one of the largest outsourcing agreements in its history—a seven-year processing services contract worth up to \$150 million—with Vital Forsikring A.S., a life insurance company in Bergen, Norway.

Although PMSC intends to continue to develop applications for IBM architecture platforms, it also intends to support open systems, as evidenced by its joint development/marketing agreement with AT&T Global Information Solutions.

b. Strategy

PMSC's strategy includes the following:

- Building a larger base of recurring systems licensing and services revenues. Since 1987, the company has increased its emphasis on the processing services market and providing a range of systems operations/outsourcing services.
- Attempting to direct more of its information services business into database products and life and health information services, where margins are generally higher. Property and casualty information services gross margins are typically lower.
- Continuing to replace revenues lost from the New Jersey Market Transition Facility outsourcing project
- Successfully integrating CYBERTEK's product line with PMSC's Series III platform and attaining profitability for the life insurance business unit during 1994
- Regaining growth and profitability in Europe

c. Products and Services

PMSC currently offers more than 135 primary products and services, including more than 90 software products.

The company's current software products and information services are summarized in the exhibits. Series III technologies serve as a platform for the company's systems. Series III supports client/server processing using relational databases, graphical user interfaces and imaging technologies to provide a seamless flow of information between insurance agents, branch offices and the home offices of insurance companies.

- A primary objective of Series III is the full integration of the information and data gathering, processing, underwriting, claims handling and reporting processes for providers of insurance to create a cooperative processing environment where insurance professionals, using advanced intelligent workstations, can process multiple tasks concurrently with minimal clerical support and data entry.
- Release 6 of Series III was made available in early 1994.
- Series III is licensed by nearly 70 insurance companies.

PMSC's software products automate most insurance processing functions, as well as various accounting, financial reporting and cash management functions.

- PMSC's primary software products run on a range of IBM and compatible computers. In addition, certain products run on microcomputers and intelligent workstations. PMSC is also working with AT&T to develop products for the UNIX environment.
- Software is licensed under standard nonexclusive and nontransferable license agreements that generally have a noncancelable, minimum term of six years and provide an initial license fee and a monthly charge.
- PMSC customers may use software licensed from the company on a remote processing basis through PMSC's data and remote service centers located in Columbia (SC), Toronto, Chicago, Dallas, Boston and Lawrenceville (NJ).
- PMSC also offers specialty processing services to its customers for unique, highly regulated businesses, such as Massachusetts automobile, Texas personal lines and automobile assigned risk plans.

Electronic (general) information services, designed to assist insurance professionals in making better decisions about risk selection and pricing and claims settlements, currently include motor vehicle reports (driving record), undisclosed driver information, driver mileage verification, claims histories, credit reports and histories, property inspection and valuation reports, property claims estimating, premium audits, physician reports and medical histories.

- Professional services provided by PMSC include systems implementation and integration assistance, migration, consulting, project planning and educational courses. These services are generally provided under time-and-materials contracts, with some fixed-price arrangements.

- PMSC offers a selection of hands-on classes to familiarize customers with the use of systems. Classes can be taught at the customer's site, at PMSC's home office or through the use of video tape.
- Education Services also provides a Resource, Evaluation and Planning Service to help customers identify their training needs.

d. Alliances and Competitors

PMSC has alliances with various vendors:

- AT&T Global Information Solutions - A strategic alliance to jointly market PMSC's Series III systems worldwide to insurance companies implementing AT&T UNIX-based solutions. AT&T has made a multimillion-dollar commitment to support the marketing of Series III software and to fund the conversion of the Series III host-associated software to UNIX-based platforms.
- Fair, Issac and Company Inc. - A marketing alliance for the U.S., Canada and Europe whereby PMSC can market Fair Issac's Underwriting Strategy Execution & Reporting (USER) system and Fair, Issac will market PMSC's Automated Information System.
- PMSC entered into a definitive pact to purchase CYBERTEK Corporation an insurance software company in Dallas, in June 1993. It is estimated that PMSC paid \$60 million for CYBERTEK.
- PMSC's line of Series II products is currently positioned as a client/server product line, complementing the PMSC outsourcing product line called Total Policy Management (TPM) services.

Major competitors include The Continuum Company and Electronic Data Systems.

3. National Electronic Information Corporation

500 Plaza Drive

Secaucus, NJ 07094

Phone: (201) 902-7000

Status: Private

1994 Total Revenues: \$20 million+ (estimate)

National Electronic Information Corporation (NEIC) is an insurance carrier-owned national claims clearinghouse created to electronically receive, edit and distribute commercial claims to participating carrier members. NEIC was established in 1981 and distributes hospital, physician and dental claims to more than 30 commercial carriers from more than 2,000 hospitals and 8,000 physicians in approximately 38

states. These carriers collectively account for more than 90% of the total commercial group claims paid nationwide. Aetna, CIGNA, John Hancock, Metropolitan Life, The Travelers, and Equitable are among the carriers on the NEIC board.

NEIC's primary product, ACU-CLAIM, is a PC-based claims preparation and submission system that enables PCs to accept all health care claims. The system operates using a diskette containing downloaded claims data from the provider's computer system. Programming or re-keying is not required by the provider or the vendor. Once information is downloaded, patient accounts personnel use ACU-CLAIM to automatically sort and select the claims required for processing. Edits are performed immediately by the ACU-EDIT feature, which identifies errors and missing information. Inaccurate or incomplete claims are held for next-day correction. Once editing is completed, NEIC claims are electronically submitted in batch to NEIC, while all others may be printed and mailed.

NEIC's most recent and ambitious project is the Health Care Information Network (HCIN). NEIC is jointly developing and expanding the network with PCS, Inc., the managed prescription care subsidiary of Eli Lilly.

When fully implemented, the HCIN will electronically transmit and receive, within a proposed time limit of 15 seconds, information regarding:

- Claims
- Eligibility
- Benefit determination
- Referrals to specialists
- Precertification/authorization for treatment
- Free-form messaging
- Medical records transfer
- EFT

However, a medical records transfer application may be difficult, as the federal government has yet to define the parameters of medical records confidentiality.

(BLANK)

